NEW OR NOTEWORTHY PORTO RICAN FUNGI

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(With Plates 2 and 3)

The following forms were collected by the senior author in Porto Rico. Specimens are deposited as stated in an article by Esther Young.[1]

Septoriopsis gen. nov.

Spores long-filamentous; conidiophores simple, borne on a tubercular base. Distinguished from related genera as is indicated in the adjacent key.

Type species, *Septoriopsis Chamaesyceae.*

Septoriopsis Chamaesyceae sp. nov.

Figs. 1, 2

Spots circular, definite, small, 1–4 mm. in diameter; centers pale to ashen; borders red. Sporodochia amphigenous, top-shaped, arising deep within the leaf tissue and erumpent, dark, about 45 μ broad at the top and of slightly greater height from base to top. Conidia like those of *Septoria,* about 35 μ long, 2 μ thick.

On *Chamaesyce hypericifolia,* Trujillo, *9438*, Rio Piedras, *9445* (type).

The Tuberculariaceae-Scolecosporiae in the first eighteen volumes of Saccardo's "Sylloge Fungorum" contain only the genus *Schizotrichum,* while volume *22* adds *Ranojevicia, Linodochium,* and *Volutellopsis.* The essential characters separating these genera are shown in the following key:

Sporodochium setose.	Schizotrichum.
Sporodochium with a ciliate margin.	Volutellopsis.
Sporodochium not setose or ciliate-margined.	
Conidiophores dichotomous.	Ranojevicia.
Conidiophores verticillate.	Linodochium.
Conidiophores simple.	Septoriopsis.

[1] Mycologia 7: 143. 1915.

Septoriopsis Piperis sp. nov.

Figs. 3, 4

Spots irregular, definitely limited, 1–2 cm. in diameter, infected tissue dead, dirty-white, bordered by a thin purplish-brown line, closely set with spore clusters. Mycelium internal, fine; conidiophores in clusters of large numbers, of same diameter as spores, aggregated into a sporodochium 45–60 μ in diameter, about 90 μ high. Conidia long, narrow, 68–165 $\times$ 3–4 μ, many-septate, obtuse, pale.

On *Piper medium,* San German, *5792* (type).

This fungus is especially interesting, since it is close to both the Melanconiales and the Moniliales. The conidiophore clusters are so large, dense, and short that the group on mere superficial examination might readily be regarded as an acervulus or even as a pycnidium but might equally be regarded as a group of conidial hyphae. The true relation is clearly shown only by microtome section. The young tubercles are often solid, nearly spherical masses which develop subepidermally and later become erumpent. When of this form they superficially and even in section look much like *Septoria.*

EXOSPORIUM Link

Exosporium Leucaenae sp. nov.

Figs. 5, 6, 7

Spots 2–4 mm. in diameter, circular, tawny, rather closely covered by sporodochia. Sporodochia hypophyllous, 110–240 μ in diameter, 30–40 μ high, exclusive of the spores, almost or quite flat-topped. Conidiophores barely tawny, much lighter in color than the spores, simple or branched toward the tip, thick, obtuse. Conidia clavate, brown, three or more septate, 58 $\times$ 8 μ obtuse, often tapering to one end.

On *Leucaena glauca,* Arecibo, *6792* (type), Vega Baja, *4295,* Manati, *5265,* Quebradillas, *5122,* Aguada, *5076.* The fungus would fall in the genus *Helminthosporium* but for the sporodochial character. The condiophores are, however, closely compacted into a true tubercular structure which, except for height, might be regarded as a coremium. To the naked eye the sporodochia look much like the sori of a rust.

RAMULARIA Unger

Ramularia Mimosae sp. nov.

Fig. 8

Conidiophores amphigenous, more abundant above. Spots indefinite, the whole affected leaf portion covered with a conspicuous whitish coating of the conidia and conidiophores. Condiophores in clusters of from ten to thirty + from the stomata, hyaline, short, about $17 \times 4\,\mu$, unbranched, continuous. Conidia hyaline, $24–37 \times 3.5\,\mu$, several-septate, straight or crooked, tapering to each end, obtuse.

On *Mimosa pudica,* Coamo Springs, *8367* (type), Penuelas, *7215*, Arecibo-Lares road, *7298*, Mayaguez, *7110*, Lajas, *7158*. This fungus is very common in Porto Rico and to the naked eye has all the appearance of an Oidium. It is quite distinct from *Cercosporella Mimosae* Sacc.

HAPLOGRAPHIUM B. & Br.

Haplographium portoricense sp. nov.

Fig. 9

Fungus superficial, forming diffuse, sooty spots on the leaf surface, epiphyllous or hypophyllous. Mycelium fine, $1.5—1.7\,\mu$, pale-yellow, forming a loose network over the leaf. Conidiphores arising directly from the mycelium, black, usually in small, 3–10, clusters, about $170\,\mu$ high, $7\,\mu$ thick, straight, rigid, septate, pale at tip, sometimes with few lateral branches. Apex branching as in *Penicillium.* Conidia ovoid, continuous, dark-colored, $17–20 \times 7–10\,\mu$.

On *Canna,* El Gigante, *8495* (type), *Canna coccinea,* Aibonite, *8447*.

The fungus appears to be strictly superficial and in general appearance is a sooty mold. The mycelium where it aggregates and gives rise to a cluster of conidiophores is much darker than the ordinary vegetative mycelium but is no greater in diameter. The conidiophores, however, are much thicker, about three times as thick as the mycelium.

The description is drawn from epiphyllous material. When hypophyllous, marked variations occur, such that were the speci-

mens examined independently they might not be placed in even the same genus. Here the typical *Penicillium*-like branching is rare, the conidiophores are longer (340 μ) and more attenuate, more lax, and typically show lateral sporiferous branches.

MICROCLAVA Stev.

Microclava Coccolobiae sp. nov.

Fig. 10

Mycelium internal, pale to brown. Conidiophores simple, about 70 μ high, 3 μ thick at base; stipe usually unicellular, upper part broadening gradually to 8 μ in thickness, and consisting of three superimposed cells.

On *Coccoloba diversifolia,* Maricoa, *8877* (type).

Wageria gen. nov.

Mycelium dark, superficial, with hyphopodia. Perithecium spherical, not ostiolate. Both typically perisporiaceous. Asci 8-spored. Spores dark, 2-celled. Perithecium with one or few vermiform appendages.

Type species, *W. portoricensis.*

The genus is named in honor of Dr. Harold Wager, of England. It differs from *Dimerium* Sacc. and Syd. in the possession of the vermiform appendage. It differs from *Phaeodimeriella* Th. and *Acanthostigma* in the absence of true setae.

Wageria portoricensis sp. nov.

Figs. 11, 12

Mycelium pale-brown, superficial, branching irregularly, 4 μ thick. Hyphopodia numerous, averaging about 35 μ apart, irregularly located, not opposite, nor regularly alternate, when young nearly spherical, soon becoming quite irregular in outline, usual diameter about 7 μ, occasionally exceeding 10 μ, usually with a central clear spot probably indicating attachment. Perithecia spherical, non-ostiolate, small, 47–55 μ in diameter, with few asci which mature successively, not simultaneously. Perithecia with 1–3, usually 1, coiled, vermiform appendages, dark, 40–80 × 7 μ. Asci irregular in shape, 8-spored, inordinate. Spores 2-celled, obtuse, dark, 21 × 6–7 μ.

On *Gonzalagunia spicata.* Jajome Alto, *8407* (type), El Alto de la Banderas, *7636.*

The characteristic appendages remind one strongly of the so-called chitinous appendages on certain Meliolas, *e. g., M. puiggarii.* They differ decidedly from true setae. In most cases there is only one on a perithecium, rarely so many as three. The perithecial wall is translucent and through it may be recognized the asci and even the spores and their septation. There is only one mature ascus but by crushing the perithecium the presence of other asci in earlier stages of development may be shown.

Mycosphaerella subastoma sp. nov.

Figs. 13, 14, 15

Spots brown, long, narrow when young, 1–2 mm. wide, 3–4 mm. long, limited laterally by veins; later by coalescence and spreading involving whole leaf segments. Perithecia 125 μ in diameter, solitary or grouped in large clusters of 2–40, dark-brown to black, globose, subepidermal, with a short beak reaching into the stomata; ostiole subastomal, definite, 20–30 μ in diameter. Asci 8-spored, 47 $\times$ 20 μ, apex strongly thickened. Spores long, narrow, 22–24 $\times$ 4 μ, hyaline.

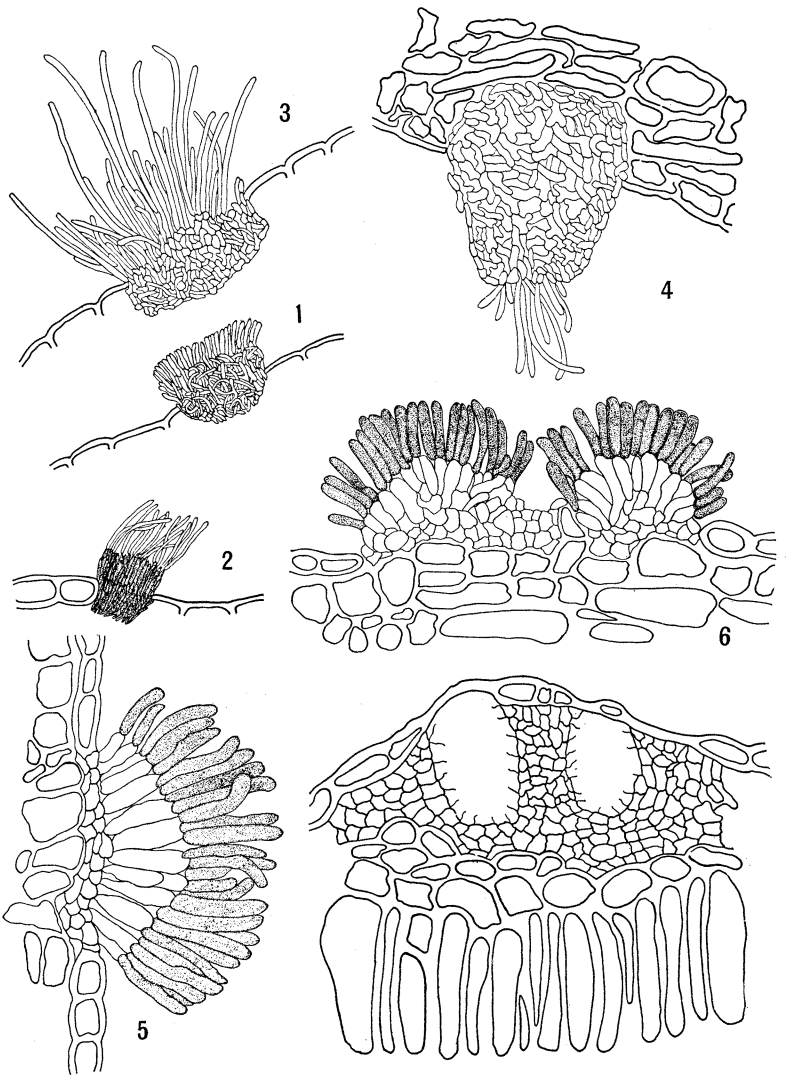
On *Aneimia adiantifolia.* Dos. Bocas., *8058* (type).

The three striking characters of this species are: the location of the ostioles directly under the stomata, the grouping of the perithecia, and the limitation of the fungus by the veins. The fungus develops strictly subepidermally and even at maturity does not become erumpent, liberating the spores by way of the stomata. The fungus differs markedly in essential characters from the several species previously described on ferns.

MYCOSPHAERELLA TYROLENSIS (Auer.) Lind.

Sphaerella tyrolensis Auer. on *Gymnogramme calomelanos* Barros, 140

Very numerous, small, 1–3 mm., tan-colored spots are produced on the host and these spots are thickly studded with the minute perithecia. Numerous "Sphaerellas" are recorded on the Pteridophytes, but all disagree with the specimens under dis-



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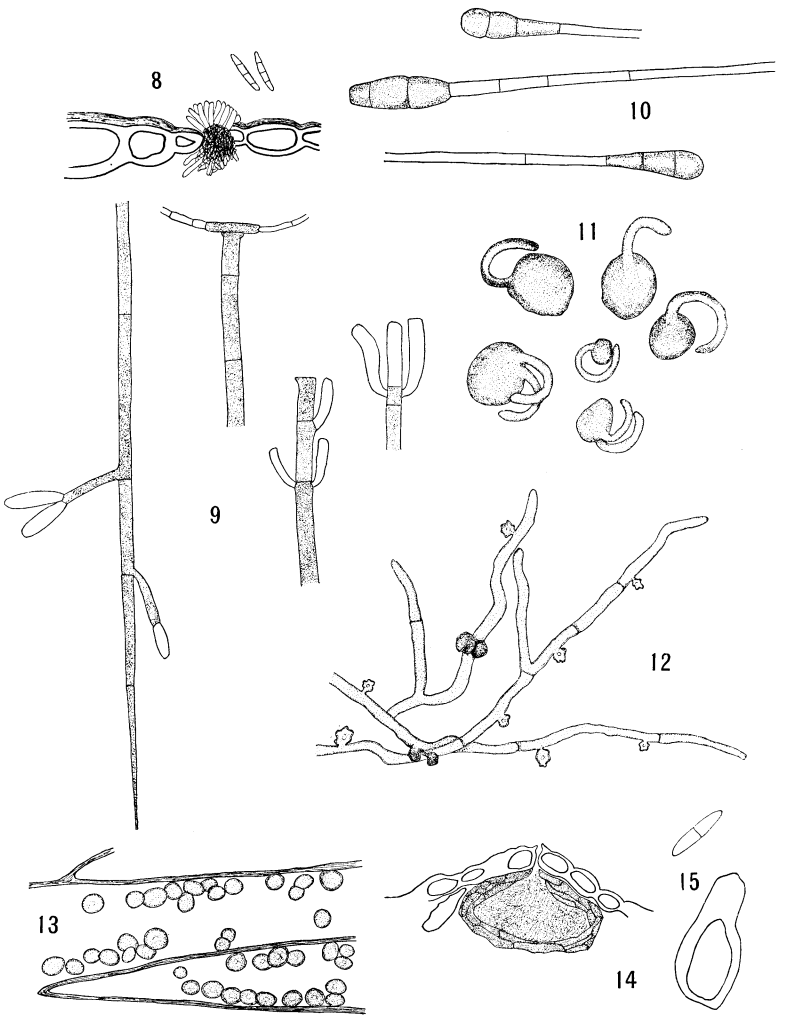

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cussion as to spore size and shape except the one above named. With this one, agreement is quite satisfactory with exception of perithecium size, which in the Porto Rican material is very uniform and considerably below the dimensions given for *M. tyrolensis*.

STEPHANOMA Wallr.

Stephanoma Melioliae sp. nov.

Mycelium hyaline, fine, 0.5–1 μ, crooked, abundant, overgrowing the *Meliola* and the adjacent leaf surface with a close network. Conidiophores arising directly from the mycelium, solitary or in groups, simple, erect, 17–27 $\times$ 3 μ, often curved at the tip. Conidia of two types: (1) spherical, 5 μ in diameter, hyaline, 1-celled, with usually eight straight, stiff spines about 3–4 μ long; (2) small, oblong, 6 $\times$ 3 μ, obtuse, continuous, hyaline.

On *Meliola tortuosa* Wint. on *Piper umbellatum* Lares, *4843* (type).

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EXPLANATION OF PLATES

PLATE 2

Figs. 1, 2. *Septoriopsis Chamaesyceae, 9445* (type). Sporodochia.

Figs. 3, 4. *Septoriopsis Piperis, 5792* (type). Sporodochia and spores.

Figs. 5, 6. *Exosporium Leucaenae, 6792* (type). Sporodochia and spores.

Fig. 7. *Exosporium Leucaenae* showing subepidermal development of the sporodochia.

PLATE 3

Fig. 8. *Ramularia Mimosae, 8367* (type). A cluster of conidiophores and conidia.

Fig. 9. *Haplographium portoricense, 8495* (type). (*a*) Condiophores showing the Penicillium-like branching. (*b*) Showing origin of conidiophore from mycelium, the mycelium being very fine and colorless and the conidiophore thick and dark. (*c*) Conidia from colony on the lower side of the leaf showing different form, mode of branching and size.

Fig. 10. *Microclava Coccolobiae, 8877* (type). Conidiophores and conidia.

Fig. 11. *Wageria portoricensis.* Perithecia with coiled, vermiform appendages, *8407* (type).

Fig. 12. *Wageria portoricensis.* Mycelium and hypopodia, *8407* (type).

Fig. 13. *Mycosphaerella subastoma.* Grouping of perithecia and limitation by veins, *8058* (type).

Fig. 14. *Mycosphaerella subastoma.* Showing perithecium is subastomal

Fig. 15. *Mycosphaerella subastoma.* An ascus and spore.